

3.1.2 AFCEE Requirements for the Use of Scientific/Management Decision Points in Ecological Risk Assessments

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Introduction

Scientific/management decision points (SMDPs) are documented communication points between risk assessors and risk managers during the conduct of an ecological risk assessment (ERA) (U.S. EPA, 1997). Risk managers generally include the installation's remedial project manager (RPM) or base environmental coordinator (BEC) and the state and U.S. EPA RPMs participating in the Environmental Restoration Program (ERP). Other stakeholders, including federal and state natural resource trustees, may also have valuable input into the decision-making process. However, the risk managers are the ultimate decision makers; they must reach agreement on the issues being addressed at each SMDP. The risk assessors contracted with the AFCEE are responsible for presenting comprehensive information on the issues so that the risk managers can reach technically defensible agreements. The agreements enable efficient and cost-effective planning and progress of subsequent elements of the ERA.

AFCEE Requirements

SMDPs will document the planning of either a screening or baseline ERA, the conduct of a screening ERA, the development of the conceptual site model (CSM) for a baseline ERA, and the development of a study design for the baseline ERA (U.S. DoD, 2000; U.S. EPA, 1997; 1998). In addition, SMDPs will occur as needed during the site investigation. Each SMDP will involve the risk managers, risk assessors, and other appropriate professionals and stakeholders; these individuals will evaluate and approve the work completed or plan the activities and direction of subsequent work. The ERA will not progress to the next step until the risk managers agree on the critical issues of the SMDP and these agreements are clearly documented. Whenever the risk managers cannot reach agreement on the critical issues that are the subject of the SMDP, the AFCEE will be notified promptly and work on the ERA will not continue.

Problem formulation and planning aspects of both screening and baseline ERAs will include an SMDP that documents the need for the ERA, its management objectives, ecological attributes potentially at risk, and agreements on the information required for making technically defensible remedial decisions (U.S. EPA, 1998). The ERA process will not begin until the risk managers agree on and document the need for and the objectives of the ERA, the ecological attributes at risk, and the information required to make remedial decisions.

Screening ERAs will include an SMDP, when the risk managers decide on and document one of the following:

- There is adequate information to conclude that ecological risks are negligible and therefore no need for remediation on the basis of ecological risk

- A baseline ERA is needed because the information is not adequate to decide whether or not ecological risks are negligible
- A baseline ERA is needed because the information indicates a potential for adverse ecological effects

CSM development for a baseline ERA will include an SMDP, when the risk assessors and risk managers discuss the CSM prepared for the site by the risk assessors contracted with the AFC EE. The risk managers must agree on all of the critical elements of the CSM: contaminants of concern, assessment endpoints, exposure pathways, and risk questions. The agreement must also be fully documented before proceeding with study design development for the baseline ERA.

Study design development will begin only after the information required for completing the baseline ERA and making technically defensible remedial decisions is comprehensively defined and documented during problem formulation and planning. Recommended measurement endpoints, data quality objectives (DQOs), site investigation methods, and data analysis techniques will be presented to and discussed with the risk managers (U.S. EPA, 1997). These recommendations will be fully based on and consistent with the agreed-upon CSM. These decisions will be fully documented in the finalized work plan (WP) and sampling and analysis plan (SAP). The decisions must have the signature approval of the risk managers before the site investigation begins.

Site investigations yielding compelling reasons to revisit the agreements of prior SMDPs will prompt an additional SMDP during the site investigations. Any changes that the risk managers agree on at this point will be documented in an addendum to the WP or SAP.

Recommended Practices and Guidance

A fundamental principle of planning either a screening or baseline risk assessment is that the risk assessors should begin planning the assessment only after they fully understand the potential value of conducting the assessment for the risk managers (U.S. EPA, 1998). Once the risk managers decide that an ERA (screening or baseline) is needed, the risk assessors contracted with the AFC EE should work with the risk managers to facilitate the development of clearly articulated management goals of the ERA. The risk assessors and risk managers should also discuss the range of management options to be considered. The scope, complexity, focus, and timing of the ERA should be clearly based on the objectives of the ERA, the complexity of the site, and the resources available. The risk assessors should proceed only after the risk managers agree on the need for and objectives of the ERA and after the risk assessors determine the relevance of the available data and the effort needed to accomplish the objectives.

The risk assessors contracted with the AFC EE should ensure that the decisions and agreements of the risk managers at each SMDP are technically sound. Each SMDP that occurs after a screening ecological risk assessment or during a baseline ERA should be documented in sufficient detail to provide a technically solid foundation for the subsequent steps of the ERA process. In particular, the decision to proceed with a baseline ERA based on the results of a screening assessment, and the agreements pertaining to baseline problem formulation, planning, and the CSM should be

documented by the risk managers as soon as possible after they are made. Documentation may be in the form of a letter from the installation RPM or BEC to the other risk managers detailing the decisions and agreements made at each of these SMDPs. Later in the process, the WP and SAP should include the documentation of these SMDPs. The WP and SAP will also document or cite the documentation for all subsequent decisions and agreements on the study design, including the results and conclusions of any field verification study of the sampling plan performed prior to finalization of the WP and SAP (U.S. EPA, 1997).

The risk assessors contracted with the AFCEE should ensure that the risk managers understand that agreements documented at prior SMDPs will not be revisited during the site investigation. Exceptions should occur only if all of the risk managers believe that there is a compelling new reason to do so (i.e., changing field conditions or unexpected nature and extent of contamination). If there is a compelling reason, then the risk assessors should present an explanation of the unexpected conditions, their implications, and recommended modifications of the WP or SAP; they should also provide satisfactory responses to the questions, comments, concerns, and expressed requirements of the risk managers. The risk assessors should ensure that the assessment endpoints and risk questions will still be addressed if changes are made to the WP or SAP during the site investigation.

Risk management should also include SMDPs that require the risk assessors and risk managers to discuss the results of the baseline ERA as needed. The risk assessors contracted with the AFCEE should ensure that the risk managers understand the results, strengths, uncertainties, and ecological significance of the baseline ERA. The risk assessors should also help to ensure that the decisions documented in the record of decision or other decision documents are technically defensible and reflect an accurate summary of the ERA.

References

U.S. DoD. 2000. *Tri-Service Remedial Project Manager's Handbook for Ecological Risk Assessment*. SFIM-AEC-ER-CR-200015. Aberdeen Proving Ground, MD.

U.S. EPA. 1997. *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Interim Final*. U.S. Environmental Protection Agency: EPA/630/R-95-002F.

U.S. EPA. 1998. *Guidelines for Ecological Risk Assessment, Final*. U.S. Environmental Protection Agency: EPA/630/R-95/002F.